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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/394,096	09/13/1999	PAUL JOSEPH DAVIS	DAVIS6-9-5	3701

7590 04/05/2006  
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EXAMINER
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SING, SIMON P

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/394,096	DAVIS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Simon Sing	2614	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 and 23-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 23-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claims 26-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 26 recites a receive path comprising a microphone, but it is unclear where to place the microphone in the receive path since in the specification and drawings, the microphone is located in the transmitting path.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-21 and 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li US 5,646,990 in view of Sacca US 5,692,042.

2.1 Regarding claim 1, Li discloses a speakerphone in figure 2 (column 6, lines 11-13), comprising:

a receive signal from a phone line 274 (by inherency when a telephone conversation is engaged);

a (hybrid) echo canceller 254 (column 6, lines 19-22; column 7, lines 22-32);  
an automatic gain control module 246 (column 6, lines 59-62); and  
a summer 260.

Li fails to teach a playback module for injecting a playback signal into the summer to allow a near-end user to hear both the receive signal and the playback signal.

However, Sacca discloses a speakerphone in figure 1 with a tape playback module, such as a tape player (column 8, lines 7-9) for injecting a playback signal (from a tape player or answering machine) into a summer of the receive path before amplifier 120 when switch 118 is closed so that the playback signal is combined with a received signal from a far-end party can be heard by the near-end user (column 9, lines 43-46; column 10, lines 21-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Li's reference with the teaching of Sacca, so that the speakerphone of Li would have been connected to a playback module (tape player or answering machine) for playing back a pre-recorded message, and summing a playback signal at the summer such that the receive signal and the playback signal both would have been heard by the near-end user at a comparable level (it is inherent that the playback module has a volume control for controlling its output level). The motivation for this modification was to enable a near-end user to connect one or more signal sources to a speakerphone as suggested by Sacca (Sacca, column 8, lines 1-14).

2.2 Regarding claim 2, Li teaches a volume control 226 and 228 in response to an acoustic echo canceller (AEC) 222 (figure 2; column 6, lines 62-67).

2.3 Regarding claims 3 and 25, it is inherent that the near-end user is able to record a telephone conversation by plug into the phone line a telephone conversation recorder, see US 3,794,767 (Todd).

2.4 Regarding claims 4 and 29, it is inherent that the playback module, such as a tape player, has an audio amplifier in its signal output path.

2.5 Regarding claim 5, it is matter of design choice to place amplifiers in a signal path.

2.6 Regarding claim 6, Li teaches a fixed gain amplifier 268 and an automatic gain control (AGC) 246 in a receiving path, and it is a matter of design choice to have two amplifiers, such as a fixed gain and a variable gain, instead of one (also see Li US 5,612,996, figure 2a, AGC 254 and amplifier 256).

2.7 Regarding claim 7, Li teaches that the volume control 226 is after AGC 246 (figure 2).

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2.8 Regarding claim 8, Li teaches a D/A 230 after volume control 226 (figure 2).

2.9 Regarding claim 9, Li teaches a Rx speech detector 252 (figure 2; column 6, lines 11-15).

2.10 Regarding claim 10, as discussed in claim 1, the playback module is an answering machine.

2.11 Regarding claim 11, it is inherent that a telephone conversation recorder has built in amplifier (or buffer) for amplifying (buffering) received signals from a receive path and a transmit path.

2.12 Regarding claims 12 and 13, it is a matter of design choice to have two amplifiers, such as a fixed gain and a variable gain, in a signal path (see Li US 5,612,996, figure 2a, AGC 254 and amplifier 256, AGC 228 and amplifier 232).

2.13 Regarding claims 14 and 15, Li discloses a full-duplex speakerphone in figure and 2 (column 6, lines 11-28). Li teaches an automatic gain control module (AGC) 246 (column 6, lines 59-62), an (hybrid) echo canceller 254, and a summer 260 (column 7, lines 22-32) for summing a receive signal the output of the echo canceller. Li fails to teach injecting a message playback signal into the speakerphone so that a near-end user can listen to the playback signal and the received signal.

However, Sacca discloses a speakerphone in figure 1 with a tape playback module, such as a tape player (column 8, lines 7-9) for injecting a playback signal (from a tape player or answering machine) into a summer of the receive path before amplifier 120 when switch 118 is closed so that the playback signal is combined with a received signal from a far-end party can be heard by the near-end user (column 9, lines 43-46; column 10, lines 21-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Li's reference with the teaching of Sacca, so that the speakerphone of Li would have been connected to a playback module (tape player or answering machine) for playing back a pre-recorded message, and summing a playback signal at the summer such that the receive signal and the playback signal both would have been heard by the near-end user at a comparable level (it is inherent that the playback module has a volume control for controlling its output level). The motivation for this modification was to enable a near-end user to connect one or more signal sources to a speakerphone as suggested by Sacca (Sacca, column 8, lines 1-14).

2.14 Regarding claims 16 and 19, Li teaches a full-duplex speakerphone in figures 1 and 2 (column 4, lines 62-67; column 5, lines 1-20; column 6, lines 11-28) with an automatic gain control (AGC) module 246 (column 6, lines 59-62), an (hybrid) echo canceller 254, and a summer 260 (column 7, lines 22-32) for summing a receive signal the output of the echo canceller. Li fails to teach injecting a message playback signal

into the speakerphone so that a far end user can listen to the playback signal and to talk at the same time.

However, Sacca discloses a voice messaging system with speakerphone capability in figure 1 (column 7, lines 23-51). Sacca teaches injecting a tape playback message (from a tape player or telephone answering device) via switch 118 into a receiving path at the input of speaker amplifier 120, and then to a transmitting path at the input of line amplifier 142 for transmitting to a far end party in a speakerphone mode (column 8, lines 7-14, 26-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Li's reference with the teaching of Sacca, so that the speakerphone of Li would have been connected to a playback module (tape player or answering machine) for playing back a pre-recorded message, and summing a playback signal at summers 260 and 270, such that the receive signal and the playback signal both would have been heard by the near-end user at a comparable level (it is inherent that the playback module has a volume control for controlling its output level), and the playback signal and a transmit signal would have also been heard by a far-end party. The motivation for this modification was to enable a near-end user to connect one ore more signal sources to a speakerphone as suggested by Sacca (Sacca, column 8, lines 1-14).

2.15 Regarding claims 17 and 20, as discussed above, the playback module is a telephone answering machine.



2.16 Regarding claim 18 and 21, Li teaches a digital speakerphone in figure 2. The digital speakerphone comprises analog to digital converters (A/D) 212 and 262, and digital to analog converters (D/A) 256 and 230. It is inherent that the playback message is converted into digital before injected into the summers 260 and 270, since signals between a A/D and D/A are digital signal.

2.17 Regarding claims 23 and 24, Sacca further teaches injecting the playback signal into a transmit path so that a far-end party can also hear the playback (Sacca, column 8, lines 36-41), and it is inherent that the near-end user is able to record a telephone conversation by plug into the phone line a telephone conversation recorder, see US 3,794,767 (Todd).

2.18 Regarding claim 26, Li discloses a speakerphone in figure 2 (column 6, lines 11-13), comprising:

- a receive signal from a phone line 274 (by inherency when a telephone conversation is engaged);

- a microphone 210 in a transmit path;

- a (hybrid) echo canceller 254 (column 6, lines 19-22; column 7, lines 22-32);

- an automatic gain control module 246 (column 6, lines 59-62); and

- a combiner 260 for combining a receive signal the output of the echo canceller.

Li fails to teach a playback module for injecting a playback signal into the combiner to allow a near-end user to hear both the receive signal and the playback signal.

However, Sacca discloses a speakerphone in figure 1 with a tape playback module, such as a tape player (column 8, lines 7-9) for injecting a playback signal (from a tape player or answering machine) into a summer of the receive path before amplifier 120 when switch 118 is closed so that the playback signal is combined with a received signal from a far-end party can be heard by the near-end user (column 9, lines 43-46; column 10, lines 21-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Li's reference with the teaching of Sacca, so that the speakerphone of Li would have been connected to a playback module (tape player or answering machine) for playing back a pre-recorded message, and summing a playback signal at the summer such that the receive signal and the playback signal both would have been heard by the near-end user at a comparable level (it is inherent that the playback module has a volume control for controlling its output level). The motivation for this modification was to enable a near-end user to connect one or more signal sources to a speakerphone as suggested by Sacca (Sacca, column 8, lines 1-14).

2.19 Regarding claim 27, Li teaches a volume control 226 and 228 in response to an acoustic echo canceller (AEC) 222 (figure 2; column 6, lines 62-67).

2.20 Regarding claim 28, it is inherent that the near-end user is able to record a telephone conversation by plug into the phone line a telephone conversation recorder, see US 3,794,767 (Todd).

### ***Response to Arguments***

4. Applicant's arguments filed on 05/10/2005 have been fully considered but they are not persuasive.

The applicants argue that Sacca does not teach a hybrid echo canceller (HEC) and an automatic gain control (AGC) module, and to suggest combining a playback signal at a summer before a AGC and after a HEC. However, Sacca teaches injecting a playback signal into a summer before an amplifier and after a side-tone canceller (which performs the same function as HEC, see Sacca, column 7, lines 42-45). In addition, the echo canceller and the automatic gain controller are taught by the primary reference (Li). Li teaches a summer before an AGC and after an echo canceller, and in view of Sacca, it is logical to inject a playback signal into the summer.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Simon Sing whose telephone number is 571-272-7545. The examiner can normally be reached on Monday - Friday from 8:30 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's

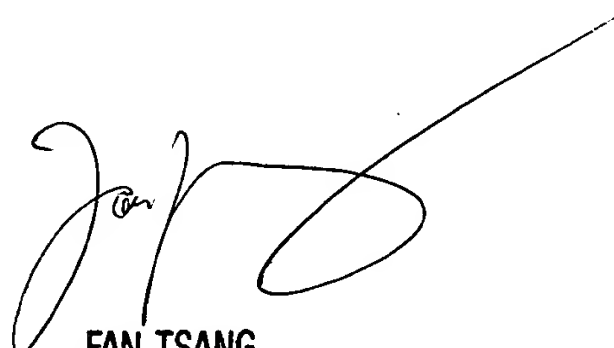
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supervisor, Fan Tsang, can be reached at 571-272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.



S. Sing

03/31/2006



FAN TSANG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600